

REMARKS

Applicants have amended their claims herein to better clarify the invention.

Independent claims 1, 11, and 21, previously recited, *inter alia*, providing a plurality of logical volumes, forming (N) logical volume groups, assigning one or more of the plurality of logical volumes to the (i)th logical volume group, where (i) is greater than or equal to 1 and less than or equal to (N). Independent claims 1, 11, and 21, are amended herein to further recite that any logical volumes not assigned to any of the (N) logical volume groups remain unassigned.

Support can be found in the Specification on Page 17 at Lines 7-9.

No new matter has been entered. Reexamination and reconsideration of the application, as amended, is respectfully requested.

Claims 1-7, 10-17, and 20-26 stand rejected under 35 USC 102(e) as being anticipated by Shinohara et al. (US Pat. No. 7,103,665).

Claims 8-9 and 18-19 stand rejected under 35 USC 103(a) as being unpatentable over Shinohara et al. in view of Burton et al. (US 6,633,962).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.Cir. 1987); MPEP 2131. Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed.Cir. 1989).

Shinohara et al. nowhere teach a method, an information storage and retrieval system comprising computer readable program code to implement the method, and/or a computer

program product to implement the method, wherein the method provides a plurality of logical volumes, forming by said storage system owner (N) logical volume groups, assigning one or more of the plurality of logical volumes to the (i)th logical volume group, where (i) is greater than or equal to 1 and less than or equal to (N), and where any logical volumes not assigned to any of the (N) logical volume groups remain unassigned.

Rather, Shinohara et al. actually teach away from the Applicants' method, information storage and retrieval system, and computer program product, as amended herein. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference . . . would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed.Cir. 1994).

Shinohara et al. teach a method, apparatus implementing that method, and computer program product implementing the method, where the method provides a plurality of logical volumes and assigns all of the logical volumes to either a first logical volume group or to a second logical volume group. For example, in FIG. 2 Shinohara et al. teach a system comprising four logical volumes, including logical volumes LV0 and LV1 in storage system 0, wherein those logical volumes are designed LV00 and LV01 in FIG. 6, and logical volumes LV0 and LV1 in storage system 1, wherein in FIG. 6 those logical volumes are designated LV10 and LV11.

In FIG. 6, Shinohara et al. teach assigning logical volumes LV00, LV01, and LV10 to Logical Volume Group 0, and assigning logical volume LV11 to Logical Volume Group 1.

Shinohara et al. nowhere teach or suggest a method which provides a plurality of logical volumes, wherein some of those logical volumes may not be assigned to any logical volume

group, as recited in Applicants' claims 1, 11, and 21, as amended herein.

One of ordinary skill in the art following the teachings of Shinohara et al. would be motivated to provide a plurality of logical volumes, and assign each of those logical volumes to one of a plurality of logical volume groups. On the other hand, one of ordinary skill in the art following the teachings of Shinohara et al. would find no motivation to provide a plurality of logical volumes and a plurality of logical volume groups, wherein one or more of those logical volumes may not be assigned to any of the logical volume groups, as recited in Applicants' claims 1, 11, and 21, as amended herein.

Claims 2-7, as amended herein, depend, directly or indirectly, from claim 1, as amended herein. Under 35 U.S.C. § 112, fourth paragraph, "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." Therefore, claims 2-7 include all the elements of claim 1. Applicants respectfully submit that claims 2-7, as amended herein, are not anticipated by Shinohara et al.

Claims 12-17, as amended herein, depend, directly or indirectly, from claim 11, as amended herein. Under 35 U.S.C. § 112, fourth paragraph, "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." Therefore, claims 12-17 include all the elements of claim 11. Applicants respectfully submit that claims 12-17, as amended herein, are not anticipated by Shinohara et al.

Claims 22-26, as amended herein, depend, directly or indirectly, from claim 21, as amended herein. Under 35 U.S.C. § 112, fourth paragraph, "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." Therefore, claims 22-26 include all the elements of claim 21. Applicants respectfully submit

that claims 22-26, as amended herein, are not anticipated by Shinohara et al.

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Neither Shinohara et al. nor Burton et al., singly or in combination, teach or suggest providing a plurality of host computers, assigning each of the plurality of host computers to one of (N) host computer groups, providing a plurality of logical volumes, forming (N) logical volume groups, wherein any logical volumes not assigned to any of the (N) logical volume groups remain unassigned, as recited by Applicants’ claims 1 and 11, as amended herein.

Applicants respectfully submit that the combination of Shinohara et al. and Burton et al. is improper. Burton et al. teaches away both Shinohara et al. Shinohara et al. teach that each host computer is assigned to one of a plurality of host computer groups. In contrast, Burton et al. teach that “a host can be in zero or more cluster groups.” Col. 4 at Lines 65-66.

As discussed above, Shinohara et al. teaches away from claims 1 and 11, as amended herein, because Shinohara et al. teach that all the logical volumes are assigned to some logical volume group. Burton et al. teaches away from claim 1 and 11, as amended herein, because Burton et al. teach that a host computer need not be assigned to any host computer group.

Applicants respectfully submit that the combined teachings of Shinohara et al. and Burton et al. do not teach or suggest all the elements of Applicants’ claims 1 or 11, as amended herein.

Claims 8-9, as amended herein, depend, directly or indirectly, from claim 1, as amended herein. Under 35 U.S.C. § 112, fourth paragraph, “a claim in dependent form shall be

construed to incorporate by reference all the limitations of the claim to which it refers.” “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed.Cir. 1988).

Applicants respectfully submit that claims 8-9, as amended herein, are non-obvious over Shinohara et al. in view of Burton et al.

Claims 18-19, as amended herein, depend, directly or indirectly, from claim 11, as amended herein. Under 35 U.S.C. § 112, fourth paragraph, “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.” “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed.Cir. 1988).

Applicants respectfully submit that claims 18-19, as amended herein, are non-obvious over Shinohara et al. in view of Burton et al.

Having dealt with all of the outstanding objections and/or rejections of the claims, Applicants submit that the application as amended is in condition for allowance, and an allowance at an early date is respectfully solicited. In the event there are any fee deficiencies or additional fees are payable, please charge them, or credit an overpayment, to our Deposit Account No. 502262.

Respectfully submitted,

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